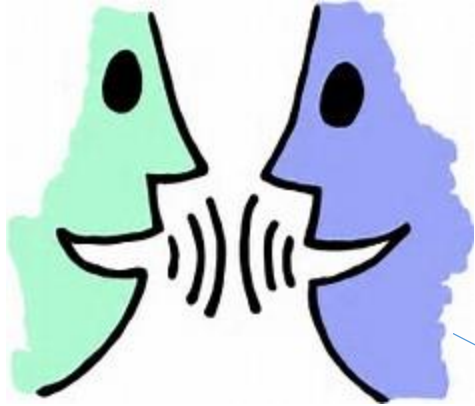


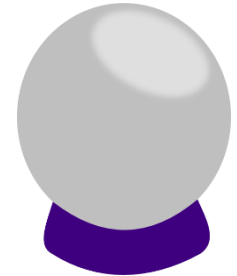
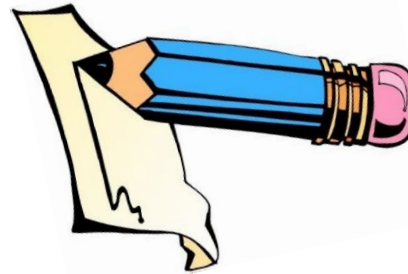
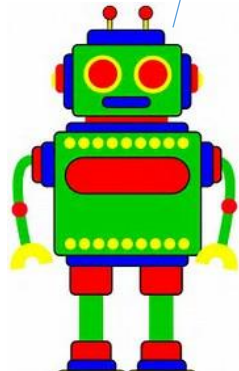
The Future with Robots

New Internationalist Ready Lesson
Upper Intermediate

This lesson:



prionsedcti



What do you think her job is?



What is your definition of a robot?
Add a synonym or synonyms.

robot

['rəʊbɒt]

NOUN

a...

synonyms: au-----

Dictionary definition

robot

['rəʊbɒt]

NOUN

a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer.

synonyms: automaton · android · machine · bot
· droid

How likely is it that robots will replace these jobs and why/why not?

interpreter	travel agent
care worker	farmer
dentist	cashier
fast food cook	legal assistant
taxi driver	soldier
social worker	surgeon

Predictions

Make 3 sentences using one of the coloured words in each sentence:

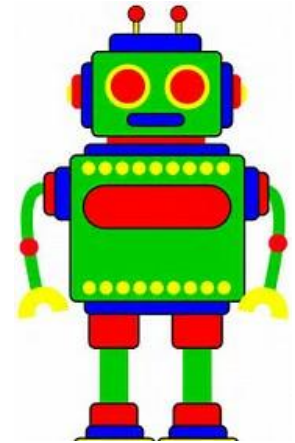
There is...

It is...

likely

likelihood

a good



highly

a strong

chance

replace

robots

that

will

cashiers



Another prediction sentence. Put the words in the correct order:

robots

of



are

cashiers

by

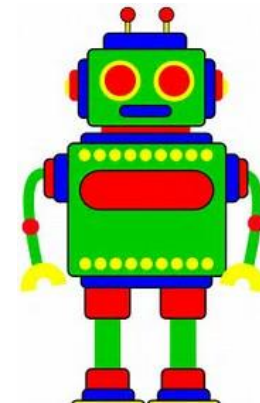
risk

being

at

replaced

great



Complete the grammar summaries with:

at risk strong chance -ing highly
little likelihood

- 1) There is a _____ likelihood that
- 2) There is very little _____ that.....
- 3) It is _____(un)likely that
- 4) There is a good _____ that
.....
- 5) There is _____ chance that
- 6) Subject + are _____ of + _____

What about the likelihood of these jobs being replaced by robots?

Job	Chance of automation	• likelihood
taxi driver	89%	
fast food cook	81%	• chance
social worker	0.3%	
surgeon	0.42%	• (un)likely
clergy	0.81%	• at risk

a) controlling something using machines and not people

b) describes computer technology especially the Internet

c) mathematical instructions given to a computer to give an answer to a problem

d) information stored on a computer

e) selling f) far away g) making rules

h) large building to store goods for selling



j) the way you send goods to people

k) doing the same thing again and again

l) to find what is wrong

m) aircraft that flies without human control

Match:

1) data

2) digital

3) drone

4) automation

5) remote

6) retail

7) diagnose

8) repetitive

9) distribution

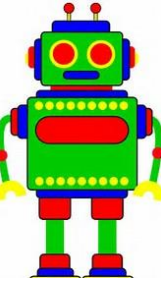
10) algorithm

11) warehouse

12) till

13) regulation

What do you think and why?



- 1) Robots have done the work of a dentist and replaced teeth. True/false?**
- 2) Artificial Intelligence is better than doctors at finding health problems. True/false?**
- 3) A report suggests that there was a likelihood that American workers who used technology voted for Trump. True/false?**
- 4) Technology will make us more equal. True/false?**

Text 1

- 1) Farming changed more quickly than industry. True/false?**
- 2) Algorithms enable computers to recognise pictures more effectively than people can/. True/false?**
- 3) Robots can do the work of a dentist. True/false?**
- 4) It is impossible to predict the future of technology. True/false?**
- 5) Most jobs are at risk. True/false?**

Text 2

- 1) One report say about a third of jobs in Britain are at risk. True/false?**
- 2) World Bank data predicts greater jobs losses in India than in China. True/false?**
- 3) The Global South may lose more jobs than in the West. True/false?**
- 4) In the USA a lot of workers have found new jobs when technology replaced theirs. True/false?**
- 5) Artificial Intelligence is better than doctors at finding health problems. True/false?**
- 6) Drones are the solution to all health problems in Malawi. True/false?**

Text 3

- 1) A report suggests that there was a small likelihood that American workers who used technology voted for Trump. True/false?**
- 2) Last year the USA manufactured less than before. True/false?**
- 3) Last year the USA manufactured more then before and with about a third fewer workers. True/false?**
- 4) Robots will be able to pick oranges and strawberries. True/false?**
- 5) Workers will suffer because of automation. True/false?**

Text 4

- 1) We may need to adapt our skills to the needs of robots. True/false?
- 2) Oxfam says there are 8 rich people who are as wealthy as all of the world's poorest 50%. True/false?
- 3) Technology will make us more equal. True/false?
- 4) The data from our internet use can be used to affect who we vote for. True/false?
- 5) The richest nations want rules to stop the misuse of data, True/false?
- 6) According to the President of Russia, Russia is leading the world in technology. True/false?

Text 1

Today the speed of change is so very fast. In the past changes in technology happened slowly over thousands of years, like farming, or hundreds of years, like industry. Today big changes happen in a few years and it is difficult to predict them. And with progress in automation, we need to think about robots in industry and driverless cars but also about the many ways computers and digital technology are changing our work and our lives. We are now at the beginning of a new age of very big and maybe very difficult changes.

Now we see sudden solutions to old problems. Researchers spent years trying to get computers to identify objects but then machine-learning solved the problem. Computers use algorithms to learn from examples, data, and experience. Google's technology to recognise pictures is now better than humans.

We thought that automation could not do the job of a dentist. But in September 2017 in China, a robot dentist put in two teeth without help from a human dentist. The teeth were 3D printed.

Of course, Silicon Valley believes in big changes. Completely changing industries means making big money for one company. Mark Zuckerberg says for Facebook, 'Move fast and break things.' This is now true for capitalists making money from technology.

Some people are worried about this. In October 2016 Klaus Schwab from the World Economic Forum was unhappy and said, 'Society is facing the "new unknown".'

Fewer jobs?

Most of the problems of automation are in work and jobs.

Citi and Oxford Martin School says 80 per cent of retail jobs are at risk. It's not just machines replacing the people at the tills in shops but more internet shopping and automation in warehouses and transport.

Text 2

The Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA) says that in Britain, we may lose jobs in finance and accounting, transport and distribution, and media marketing and advertising.

Another report says we may lose one in three British jobs.

And for the Majority World things are no better. A study using World Bank data says we may lose 77 per cent of jobs in China, 69 per cent in India, and 85 per cent in Uzbekistan. These ideas about the future are because there may be no more low-wage labour in the Global South with automation making manufacture cheaper in the West. And more automation in poorer countries may replace more jobs than in the West. Others disagree and say with new technology there will be different kinds of jobs, or life will be better and work will matter less. But in the US, only 0.5 per cent of workers have found new and different jobs. There is also the idea that it is better to have automation in jobs that are boring, repetitive, dirty or dangerous.

But there are very good technological advances. Artificial intelligence can now find cancers better than doctors and is better than doctors in diagnosing symptoms. Robots can do surgery with steady hands. This is good news of course for patients but not so good for the doctors.

It is likely and maybe possible for computer programs to study case law better and faster and suggest lines of defence in court. But do we want them to be the only possibility? Algorithms can find illegal financial transactions in a millisecond. But they can also do fast buying and selling on the stock market. At the same time they can compete with other computers. It's very good that drones can deliver medicines to remote rural areas in Malawi. But there is a problem if the areas stay remote and that is the only health care they have.

Text 3

We always need to think about the effects on humans. And we are not doing that enough.

A new report showed that US workers who used automation at work were more likely to vote for Donald Trump. It is possible they were thinking about Trump's plan to bring manufacturing back to the US again. But in 2016, the US produced more goods than ever (85 per cent more than in 1987). And with one important difference: it did this with 30 per cent fewer workers. Manufacturing was already back in the US but more and more machines did the work. Maybe Trump blamed globalization for losing jobs but today many people say that automation is a bigger problem.

Orange growers in California are, worried about not finding enough cheap migrant workers. They are investing in an orange-picking robot. And in Britain with Brexit, farmers are thinking about automated strawberry-pickers costing \$250,000 each.

Bad for workers

Many predictions about work make a few unhappy points. More and more we will divide jobs into low-paid/low-skilled and high-paid/high-skilled, with only a few people doing the high-paid/high-skilled jobs. Workers will have less power and wages will go down. Algorithms in management will lead to more robotic working conditions for humans; and maybe many people will do work that is just between machines.

Willem Schinkel is a Dutch sociologist. He says, 'If we think that work will disappear, that is a very good way to make us work more cheaply.' This means we will be at work 24 hours a day. Then we will want to have our boring 9-to-5 jobs back.

Text 4

Another idea is that more and more jobs will not be necessary. So we must learn new skills again and again to have a job. And perhaps most of us do not want to do this or cannot do this. So we must fit our skills to the needs of the intelligent machines and those who control them!

Another prediction is that inequality will increase with technology. This would be very bad for the Global South. At the beginning of 2017 Oxfam said that just eight rich men now control as much wealth as the world's poorest 50 per cent.

Social critic Curtis White said,, 'Robots are very good at supply but they don't create demand.' Techno-capitalism would make most of us economically worthless for our labour, and there would be a few very rich people controlling us..

We can see this power grab in the world of Big Data. Many people complain that all our digital activities, and the way the internet watches us, are making a rich bank of data, And only a few mainly US companies are using this data. They can use this data to influence our political behaviour, what we buy, and many other parts of our lives. Critics say that governments are giving public statistics to the big data companies and they are doing it without thinking. But at digital trade talks the rich countries make sure that they stop any kind of regulation.

Artificial Intelligence (AI)

In September 2017, Vladimir Putin said, 'Artificial intelligence is the future, not only for Russia, but for the world.. The leader in AI will be the leader of the world.' Putin was talking about the AI we will have in the future - general artificial intelligence (AGI). AGI could possibly do what humans do and do it better – in financial markets, in research, in controlling human leaders, and making weapons we cannot understand.

The future of robotics and automation in 2030.

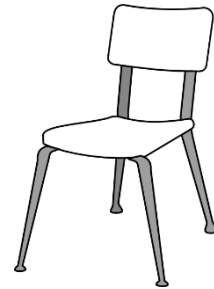
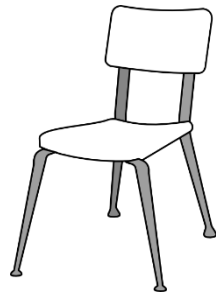


future simple

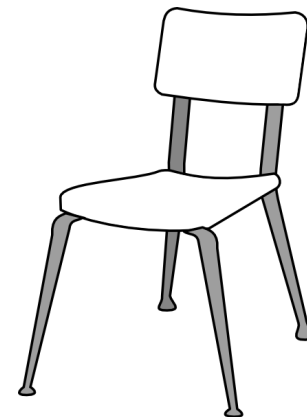
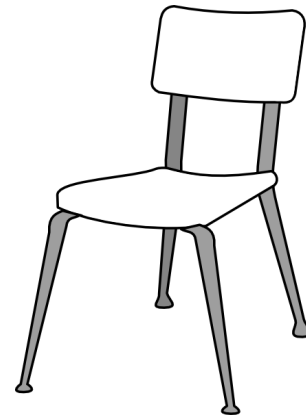
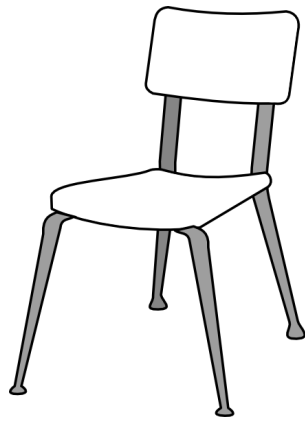
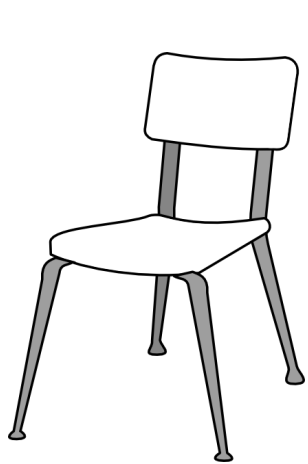
future continuous

future perfect
simple

future perfect
continuous



medicine transport dirty jobs
communication

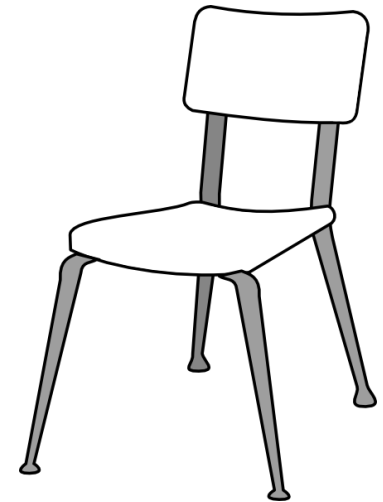
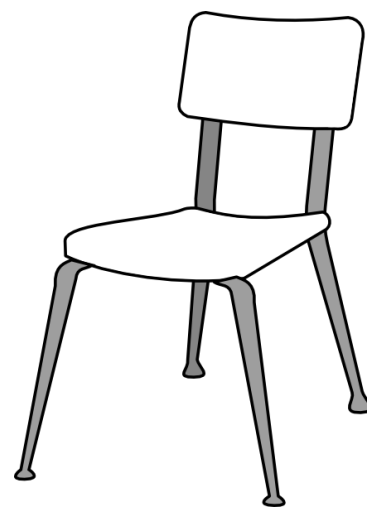
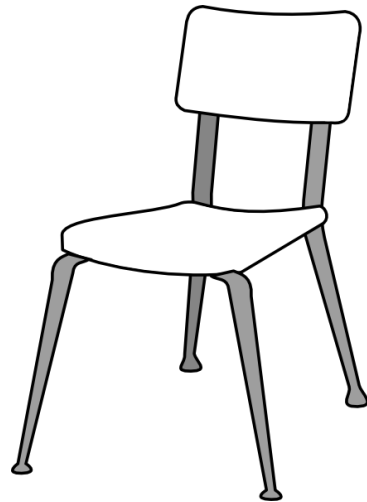
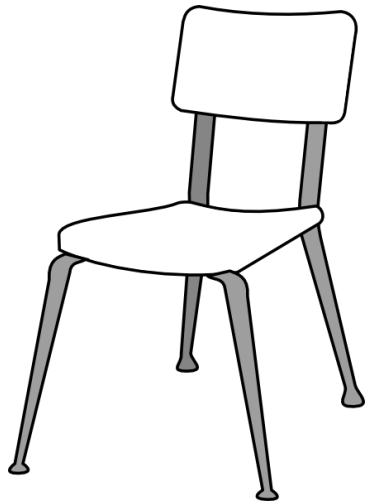


A leading cause of death in the US is medical error. This will be eradicated by robots.

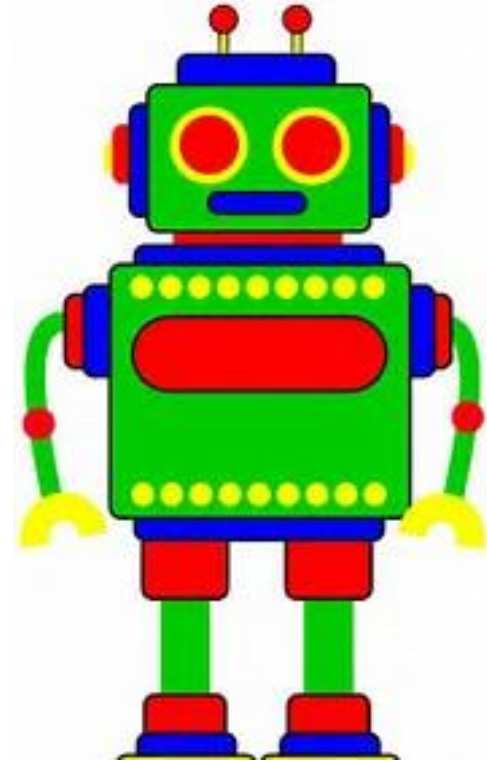
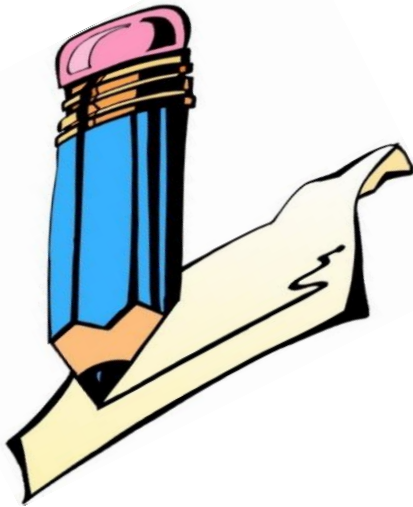
By 2030 we will be conversing directly with humanoid robots.

Many jobs like refuse collection will have been replaced by invisible robots.

By 2030 we will have been using driverless taxis for years.



Homework



The advantages and disadvantages of robots and automation.